

MATERIAL SAFETY DATA SHEET

QUICK REFERENCE:

SC-40



H - O - H Water Technology, Inc.
500 South Vermont Street
Palatine, Illinois 60067

EMERGENCY PHONE No's

847 - 358 - 7400 (H - O - H BUSINESS Hrs.)
800 - 424 - 9300 (CHEMTREC - 24 Hrs.)

H M I S:

4 = EXTREME
3 = SEVERE
2 = MODERATE
1 = SLIGHT
0 = INSIGNIFICANT

HEALTH	2
FLAMMABILITY	2
REACTIVITY	0

DOT:

HAZARD LABELING



IN DOT APPROVED POLYETHYLENE CONTAINERS

PRODUCT IDENTIFICATION	PRODUCT NAME	CHEMICAL FAMILY	DATE	Rev. No.	SUPERSEDES	EPA - TPQ	BY
	SC - 40	BOILER / STEAM TREATMENT	7 - 12 - 08	14	7 - 12 - 06	67,000 lbs.	

HAZARDOUS COMPONENTS	CHEMICAL NAME	COMMON NAME	CAS No.	PERCENT	OSHA PEL	ACGIH - TLV	OTHER
	CYCLOHEXYLAMINE (Ref. EPA - TPQ)	SAME	108 - 91 - 8	15	NA	TWA - 10 ppm 40 mg/m ³	NOT APPLICABLE
	MORPHOLINE	SAME	110 - 91 - 8	5	20 ppm 70mg/m ³ SKIN	TWA - 20 ppm 70mg/m ³ SKIN	OSHA Cel. 30 ppm 107 mg / m ³

COMMENT	<p>1. IF THIS PRODUCT IS USED IN A CONFINED AREA, HARMFUL AMINE VAPORS MAY ACCUMULATE. DO NOT ALLOW SHIPPING CONTAINERS TO REMAIN OPEN TO THE ATMOSPHERE. ALL CHEMICAL BATCH TANKS SHOULD BE LOCATED WHERE SUFFICIENT EXHAUST / VENTILATION IS PRESENT.</p> <p>2. THE AMINE CONTAINED IN THIS PRODUCT IS STRONGLY ALKALINE AND MAY BE ABSORBED THROUGH THE SKIN IF CONTACT TIME IS SUFFICIENT. SKIN CONTACT MAY NOT PRODUCE AN IMMEDIATE SENSATION, BUT IF THE AFFECTED AREA IS NOT PROMPTLY WASHED, SEVERE IRRITATION OR CHEMICAL BURNS WILL RESULT.</p> <p>3. CONTACT EYE LENSES SHOULD NOT BE USED WHILE HANDLING THIS PRODUCT. THIS PRODUCT IS NOT TO BE USED IN CONJUNCTION WITH NITRITE CONTAINING BOILER OR CLOSED SYSTEM TREATMENTS TO AVOID THE FORMATION OF POTENTIALLY CARCINOGENIC NITROSAMINES.</p> <p>4. THIS PRODUCT IS APPROVED FOR USE IN FOOD PROCESSING PLANTS SUBJECT TO THE UNITED STATES DEPARTMENT OF AGRICULTURE MEAT AND POULTRY INSPECTION PROGRAM WHERE STEAM CONTACTS EDIBLE PRODUCTS.</p>
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PHYSICAL DATA	<p>BOILING POINT (Degrees Fahrenheit) 211°</p> <p>VAPOR PRESSURE (in millimeters of Mercury) WATER</p> <p>VAPOR DENSITY (air = 1.0) 3.4 - Cyclo. 4.0 - Morph.</p> <p>APPEARANCE and ODOR CLEAR, COLORLESS TO PALE YELLOW LIQUID WITH MODERATE AMMONIACAL ODOR.</p>	<p>SOLUBILITY (in water) MISCIBLE</p> <p>SPECIFIC GRAVITY (water = 1.0) 0.990</p> <p>PERCENT (%) VOLATILE (by volume) 100</p>	<p>EVAPORATION RATE (water = 1.0) 1.0</p> <p>pH 12.3</p>
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FIRE AND EXPLOSION	<p>FLASH POINT (Degrees Fahrenheit) ABOVE 127°</p> <p>METHOD TCC</p>	<p>FLAMMABLE LIMITS</p> <p>LOWER EXPLOSIVE LIMIT NOT APPLICABLE</p> <p>UPPER EXPLOSIVE LIMIT NOT APPLICABLE</p>	<p>EXTINGUISHING MEDIA WATER, CO₂, ALCOHOL FOAM, DRY CHEM.</p> <p>SPECIAL FIRE FIGHTING PROCEDURES</p> <p>CONTAIN SPILLS - COOL CONTAINERS</p> <p>DO NOT ENTER AN AREA WHERE A SPILL HAS OCCURED WITHOUT SELF-CONTAINED BREATHING APPARATUS.</p> <p>HEATED CONTAINERS WILL SWELL DUE TO THE FORMATION OF FLAMMABLE VAPOR. COOL CONTAINERS TO REDUCE OR AVOID SWELLING.</p> <p>UNUSUAL FIRE AND EXPLOSION HAZARDS</p> <p>HEAVY, TOXIC, FLAMMABLE VAPORS</p> <p>IF THIS PRODUCT IS SPILLED / HEATED AS MAY OCCUR DURING A FIRE OR OTHER EMERGENCY, HEAVY FUMES MAY BE PRODUCED THAT CAN FLOW ALONG SURFACES TO DISTANT IGNITION SOURCES LEADING TO POSSIBLE FLASH BACK.</p>
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REACTIVITY DATA	<p>STABILITY</p> <p>STABLE <input checked="" type="checkbox"/> UNSTABLE <input type="checkbox"/></p> <p>INCOMPATIBILITY (Materials to Avoid)</p> <p>STRONG ACIDS, OXIDIZING AGENTS (SUCH AS CHLORINE OR CHLORINE RELEASE COMPOUNDS), COPPER, COPPER ALLOYS (SUCH AS BRASS), AND GALVANIZED STEEL.</p> <p>HAZARDOUS DECOMPOSITION PRODUCTS</p> <p>NONE UNDER ORDINARY CIRCUMSTANCES. UNDER EXTREME HEATING, SUCH AS MAY OCCUR IN A FIRE, DECOMPOSITION MAY RESULT IN THE PRODUCTION OF CARBON MONOXIDE, NITROGEN OXIDES, AMMONIA.</p> <p>HAZARDOUS POLYMERIZATION MAY WILL OCCUR <input type="checkbox"/> WON'T OCCUR <input checked="" type="checkbox"/></p>	<p>CONDITIONS TO AVOID</p> <p>NOT APPLICABLE</p>
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SPECIAL PRECAUTIONS	<p>STORAGE AND HANDLING</p> <p>1. PROTECT CONTAINERS AGAINST PHYSICAL DAMAGE.</p> <p>2. STORE IN A COOL, DARK, WELL-VENTILATED LOCATION AWAY FROM DIRECT SUNLIGHT AND OTHER SOURCES OF RADIANT HEAT.</p> <p>3. KEEP CONTAINERS TIGHTLY CLOSED WHEN NOT IN USE. NEVER MOVE AN OPEN OR LOOSELY CLOSED CHEMICAL CONTAINER.</p> <p>4. WEAR HAND AND FOOT PROTECTION WHEN MOVING HEAVY CONTAINERS.</p>	<p>OTHER</p> <p>1. NOT TO BE TAKEN INTERNALLY.</p> <p>2. NOT TO BE USED FOR OTHER THAN SPECIFIED PURPOSE.</p> <p>3. KEEP AWAY FROM CHILDREN.</p> <p>4. NEVER MIX THIS MATERIAL WITH ANY OTHER CHEMICAL UNLESS AT THE SPECIFIC DIRECTION OF H - O - H PERSONNEL.</p> <p>5. TRIPLE RINSE EMPTY CONTAINERS BEFORE OFFERING FOR DISPOSAL OR SALVAGE. NEVER REUSE EMPTY CONTAINERS.</p>
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HEALTH HAZARD DATA	THRESHOLD LIMIT VALUE	57 ppm (AIR), 224mg/m ³ (SKIN) BASED ON A MIST OF SC - 40 IN AIR RELATIVE TO ITS PURE COMPONENTS.	SC-40
	ACUTE HEALTH HAZARDS		CHRONIC HEALTH HAZARDS
	MODERATE IRRITANT TISSUE BURNS, IRRITATION OF THE RESPIRATORY TRACT, HEADACHE, NAUSEA, DIZZINESS, FATIGUE.		CAUTION REPEATED AND/OR PROLONGED EXPOSURE AT LOW LEVELS TO THE CONCENTRATED PRODUCT OR DILUTIONS MADE FOR PRODUCT APPLICATION MAY RESULT IN ADVERSE RESPIRATORY EFFECTS, REPRODUCTIVE DISORDERS, OR ADVERSE SKIN OR EYE EFFECTS.

EFFECTS OF EXPOSURE	SKIN AND EYES / TARGET ORGAN	INHALATION	INGESTION
	TISSUE IRRITATION PRODUCT CONTACT WITH EYES OR SKIN CAUSES IRRITATION, PAIN, AND POSSIBLE BURNS, NECROSIS, PERMANENT INJURY, OR BLINDNESS. PRODUCT VAPOR MAY CAUSE LACRIMATION, CORNEAL EDEMA, OR CONJUNCTIVITIS. CORNEAL EDEMA MAY PRODUCE TRANSIENT BLUE HAZE VISION.	CAUTION - VOLATILE COMPONENTS BREATHING THE VAPORS OF THE CONCENTRATED PRODUCT OR ITS APPLICATION DILUTIONS MAY PRODUCE MUCOUS MEMBRANE IRRITATION, FATIGUE, HEADACHE, NAUSEA, OR DIZZINESS. IF PRODUCT LIQUID OR MIST IS INHALED, SEVERE DAMAGE AND SCARRING OF TISSUE MAY RESULT.	STRONG IRRITANT IRRITATION OF LIPS, MOUTH, AND THROAT. ALSO PAIN IN SWALLOWING, STOMACH AND ABDOMINAL PAIN, NAUSEA AND VOMITING, DIARRHEA, AND POSSIBLE SHOCK. DEATH MAY RESULT IF THE CONCENTRATED PRODUCT IS INGESTED AND PROMPT MEDICAL TREATMENT IS NOT OBTAINED.
CONDITIONS AGGRAVATED	DERMATITIS, ALLERGIES, OR ANY EXISTING SKIN OR EYE CONDITION.	ASTHMA, BRONCHITIS, EMPHYSEMA, OR, POSSIBLY, ANY OTHER CHRONIC RESPIRATORY DISEASE.	IF INGESTION OCCURS, STOMACH ULCERS OR OTHER PRE - EXISTING DIGESTIVE CONDITIONS.

EMERGENCY PROCEDURES	SKIN AND EYES	INHALATION	INGESTION
	EYES FLUSH EYES WITH WATER FOR 15 MINUTES. SEEK MEDICAL ATTENTION AS SOON AS POSSIBLE. DO NOT USE CONTACT LENSES WHILE HANDLING THIS PRODUCT. SKIN FLUSH WITH WATER FOR 15 MINUTES, REMOVE CONTAMINATED CLOTHING AND WASH WELL BEFORE REUSE. IF IRRITATION DEVELOPS, GET MEDICAL ATTENTION. AMINES ARE RAPIDLY ABSORBED INTO LEATHER. DISCARD CONTAMINATED LEATHER WEAR.	VOLATILE COMPONENTS MOVE PERSON(S) TO UNCONTAMINATED AREA. LOOSEN ANY RESTRICTIVE CLOTHING, CLEAR AIRWAY, AND HAVE THE PERSON LAY DOWN AND REMAIN QUIET. IF BREATHING HAS STOPPED OR IS IMPAIRED, GIVE ARTIFICIAL RESPIRATION AND/OR OXYGEN AND GET EMERGENCY MEDICAL SERVICE. BE SURE THAT ANY VOMITED MATERIAL IS NOT DRAWN INTO THE BREATHING TRACT. DO NOT LEAVE THE PERSON ALONE. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.	DO NOT INDUCE VOMITING IF CONSCIOUS, DILUTE INGESTED MATERIAL WITH 2 OR MORE GLASSES OF WATER OR MILK. DO NOT INDUCE VOMITING. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. EMERGENCY MEDICAL ATTENTION IS REQUIRED.

CARCINOGEN LISTING	NATIONAL TOXICOLOGY PROGRAM (NTP)	I A R C MONOGRAPHS	O S H A REGULATED
	NO	NO	YES (BOTH)

SPILL OR LEAK PROCEDURES	SPILLS AND RELEASES	WASTE DISPOSAL METHODS
	CONTAIN SPILLED MATERIAL AND COLLECT INTO SUITABLE CONTAINER FOR DISPOSAL. NEUTRALIZING SPILLED MATERIAL WITH A MILD ACID SOLUTION WILL HELP REDUCE THE DISCHARGE OF POTENTIALLY HARMFUL VAPORS. USE 5% SOLUTIONS OF SULFURIC OR SULFAMIC ACID. HYDROCHLORIC ACID WILL CAUSE THE GENERATION OF A SMOKE - LIKE FOG. ABSORB LIQUID INTO SAND OR CLAY TO AID IN PICKUP AND DISPOSAL. DO NOT ABSORB SPILLED MATERIAL INTO RAGS OR PAPER. THIS MAY RESULT IN INCREASED RISK OF FIRE. VENTILATE THE AREA WHERE ANY SPILL HAS OCCURED TO PREVENT THE ACCUMULATION OF HARMFUL VAPORS.	CONSULT FEDERAL, STATE, AND LOCAL REGULATIONS PERTAINING TO WASTE DISPOSAL.

CONTROL MEASURES	EYE PROTECTION	FOR NORMAL USE, WEAR CHEMICAL GOGGLES OR A FACE SHIELD TO PREVENT CONTACT DUE TO MINOR SPLASHING. IN THE EVENT OF A SPILL, EYE PROTECTION SHOULD BE INCLUDED WITH THE REQUIRED TIGHTLY FITTING CANNISTER MASK.		
	RESPIRATORY PROTECTION	NOT REQUIRED FOR ORDINARY USE. DURING EMERGENCY CONDITIONS OR IF A SERIOUS SPILL OCCURS, AN AIR PURIFYING RESPIRATOR DESIGNED TO ABSORB AMMONIACAL VAPORS SHOULD BE USED.		
	OTHER PROTECTIVE EQUIPMENT	IMPERMEABLE CLOTHING. AN EYEWASH FOUNTAIN IS ADVISABLE IN THE AREA OF USE. LEATHER WEAR SHOULD NOT BE USED IF THERE IS RISK CONTACT WITH THIS PRODUCT. CONTAMINATED LEATHER WEAR SHOULD BE DISCARDED.		
	LOCAL EXHAUST	SPECIAL VENTILATION	IF LOCAL EXHAUST IS INSUFFICIENT TO PREVENT VAPOR BUILDUP, PROVIDE MECHANICAL EXHAUST.	
	MECHANICAL VENTILATION	OTHER VENTILATION	NOT REQUIRED FOR NORMAL USE.	
	PROTECTIVE GLOVES	PROTECTIVE CLOTHING	IN CASE OF SPILLS, WEAR BUTYL RUBBER BOOTS, APRON, OR NON - ABSORBENT BODY SUIT.	

REFERENCES	1. <i>Threshold Limit Values For Chemical Substances And Physical Agents In The Work Environment</i> ; ACGIH, 1989. 2. <i>O S H A Safety and Health Standards</i> : 29CFR 1900 to 1910, July 1, 1988 3. <i>Fifth Annual Report on Carcinogens</i> ; U. S. Dept. of Health and Human Services, National Toxicology Program, 1989 (Summary). 4. M. Sittig, <i>Handbook of Toxic & Hazardous Chemicals</i> , (Noyes Publications, Park Ridge, N. J., 1981). 5. <i>Community Right - To - Know Manual</i> , (Thompson Publishing Group, Washington, D. C., 1990). 6. <i>Right - To - Know / Chemical Manual</i> (ILLINOIS MANUFACTURES ASSOCIATION; Rooks, Pitts, and Poust, 1990). 7. <i>Toxic and Hazardous Industrial Chemicals Safety Manual</i> (THE INTERNATIONAL TECHNICAL INFORMATION INSTITUTE, 1975). 8. M. J. Lefevre, S. A. Conibear, <i>First Aid Manual for Chemical Accidents</i> , 2nd ed. (Van Nostrand Reinhold, New York, 1989). 9. <i>Hazardous Materials Guide; Shipping, Materials Handling and Transportation</i> (J. J. KELLER & ASSOCIATES, Inc., Neenah, Wisconsin, Dec. 1990) 10. <i>Hazard Communication Guide; Federal & State Right to Know Standards</i> (J. J. KELLER & ASSOCIATES, Inc., Neenah, Wisconsin, Dec. 1990)

REPORTABLE QUANTITY	IF MORE THAN THE INDICATED QUANTITY IS DISCHARGED TO DRAINAGE (Sewer / surface water), AIR, OR SOIL, IMMEDIATELY REPORT AS INDICATED.		
	CERCLA OR EPA (Extremely Hazardous) NATIONAL RESPONSE CENTER (800 - 424 - 8802)	STATE EMERGENCY RELEASE NOTIFICATION ILLINOIS (Only) 800 - 782 - 7860 (Consult for others)	LOCAL EMERGENCY RESPONSE AUTHORITY Record Telephone No. of Local Response Authority
WRITTEN REPORT MUST FOLLOW	NA	NA	NA